TRI-LOK

OPEN STEEL FLOORING
CONCRETE ARMORING
SAFETY STEPS
T-TRI-LOK

DRAVO-DOYLE COMPANY

PITTSBURGH, PA.

National Distributors

A. I. A. File No. 14-R-11

TRI-LOK

"KING OF THE WALK"

TRADE MARK

OPEN STEEL FLOORING
CONCRETE ARMORING
SAFETY STEPS
T-TRI-LOK

Manufactured by

The Tri-lok Company

PITTSBURGH, PA.

Protected by Patents and Patents Pending

R. E. STANTON COMPANY
2694 University Avenue
ST. PAUL, MINN.
Nestor 2342

CATALOG 1029

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THE TRI-LOK STRUCTURE

AN IDEAL STRUCTURE has been defined as a combination of structural members simply and rigidly connected, and of least weight to carry a given load. The requirements for an ideal open steel flooring are therefore:

(1) Simplicity of construction.
(2) Permanent strength and rigidity.
(3) Minimum weight to properly carry and distribute a given load.
(4) Maximum opening for light and ventilation.
(5) Adaptability of design to any installation requirements.

Many laboratory tests and years of service have proven that the patented Tri-Lok joint gives an unequalled combination of all these essential features.

Simplicity

Only two parts are used—bearing bars which carry the load and have curved slots punched ABOVE THE NEUTRAL AXIS, and cross bars pressed into these slots to distribute the load. No rivets, bolts or welds are required, thus eliminating the possibility of defective or loose joints—a frequent cause of trouble.

Strength and Rigidity

In assembling, the bearing bars are set on edge with the slots uppermost and with these slots in adjacent bars curving alternately in opposite directions. Each bar is held in a rigid steel frame, insuring perfect alignment. Cross bars of the same depth and width as the bearing bar slots are then forced into these slots under a 1600 TON PRESS. This completes the triple twist and turn lock and the enormous pressure insures a perfectly smooth surface regardless of slight variations in dimensions of commercial steel bars. A smooth floor means greater comfort for the workman in walking and wheeling loads.

A joint of this type can be destroyed only by a force similar to that required to create it, and the Tri-Lok joint is made under a pressure far in excess

1. *Bearing bars slotted for friction lock in one direction;*
2. *Alternate Bearing Bars slotted for friction lock in opposite direction;*
3. *Cross bars locked by twist in both directions under enormous hydraulic pressure.*

of that used on any other steel flooring. Tests at Columbia University, University of Pittsburgh, and Pittsburgh Testing Laboratory have proven that the Tri-Lok joint remains unimpaired beyond the yield point and is therefore stronger than the steel itself. The Tri-Lok joint will never become loose and stands alone for strength, rigidity, durability and indestructibility.

Minimum Weight

The Tri-Lok bearing bars are not punched or cut below the neutral axis, so that the strength of the lower or tension side is unimpaired. The wedge action from forcing the cross bars into the curved locking slots increases the strength of the upper or compression side—hence the load carrying capacity of the bearing bars is greater than that of corresponding solid bars. The cross bars are of sufficient depth to eliminate all lateral deflection of the bearing bars, and because of the rigid lock at the joint they act also AS CROSS BRACES, giving perfect distribution of a concentrated load over a

wide panel. Hence, every pound of Tri-Lok is used with MAXIMUM EFFICIENCY to either carry or distribute the load, resulting in the least possible weight for a given load. This means less dead weight and deflection, lighter supports, and reduced handling and erection costs. Compare Tri-Lok safe load and deflection tables with those of any other flooring.

Light and Ventilation

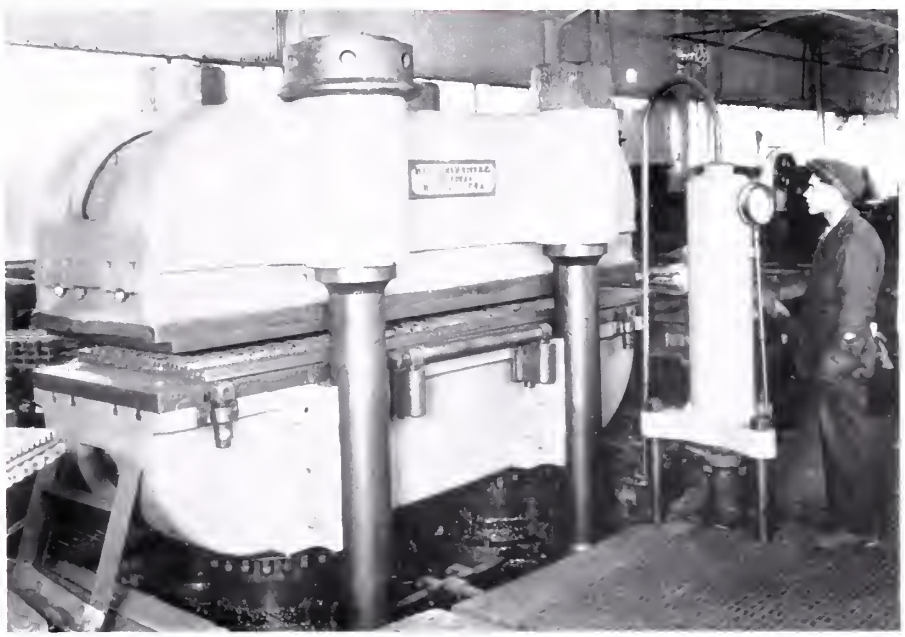
All joints are at right angles, giving a maximum area for the transmission of light and air. Tri-Lok rectangular flooring is approximately 90% open and will remain so. The absence of any acute angles or rivet heads prevents clogging and rusting with resultant deterioration. It likewise permits painting, repainting or galvanizing every corner, insuring a perfect protective coating.

Adaptability

The simplicity of the Tri-Lok joint permits the ready manufacture of a great variety of bearing and cross bar spacings to meet different conditions of service, and of three totally different types—rectangular, diagonal and radial, as well as T-Tri-Lok. Other makes of flooring are limited commercially to one type and comparatively few spacings.

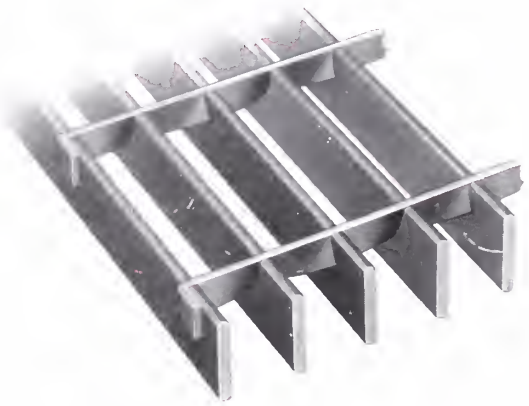
This simple joint also means that Tri-Lok products can be manufactured from a great variety of metals other than steel; for example, BRASS, BRONZE, ALLOY STEEL, ALUMINUM, DURALUMIN, etc. A good deal of copper bearing steel has been used which provides considerable resistance to rust. Nearly all of the recent U. S. Naval Cruisers have been equipped with Tri-Lok duralumin flooring and treads for hatchways, engine rooms, etc.

This remarkable adaptability of Tri-Lok means an unequalled ability to furnish a proper design for the particular conditions of any flooring or armoring installation, and the nearest Tri-Lok representative therefore can be of real help on your next job. The Tri-Lok Engineering Department is always ready to prepare layout drawings from your building plans, saving you this expense. After an order is received detailed drawings are submitted for approval if desired, and complete erection instructions are furnished.

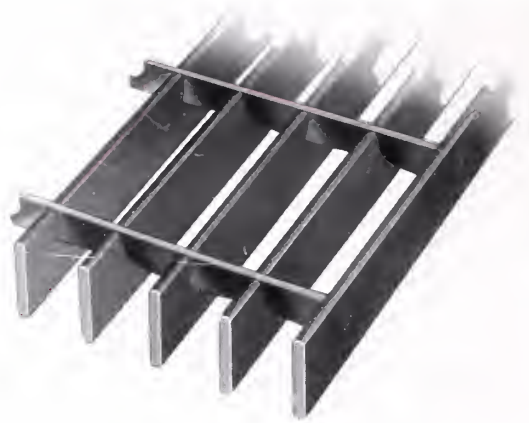


Tri-Lok 1600 Ton Hydraulic Press

TRI-LOK RECTANGULAR OPEN STEEL FLOORING



Bent-Over Cross Bars



Plain End Cross Bars

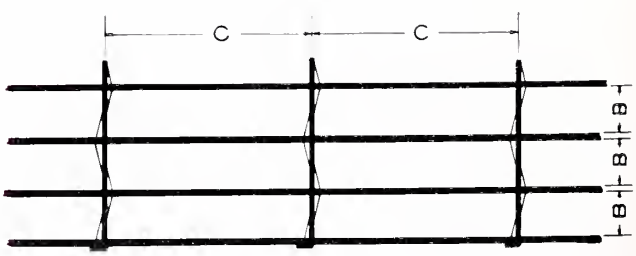
TRI-LOK Rectangular Flooring is built with straight bearing and cross bars and its practical, clean-cut open design makes it unexcelled for any ordinary application.

The cuts above illustrate both the bent over and plain end cross bars. The bent over type is recommended because it is stronger and holds bearing bars of adjoining panels far enough apart to permit cleaning.

Since nearly all open steel flooring is subject to concentrated loads in one form or another, the DISTRIBUTING CAPACITY is even more important than strength and rigidity. The wide panels and deep cross bars give perfect distribution of concentrated loads on Tri-Lok flooring.

The simplicity of the joint permits its manufacture with any spacing of bearing or cross bars and with any size of these bars. The standard CLEAR OPENINGS between bearing bars (dimension "B" in sketch to the right) are 5/8", 3/4", 1", 1 1/4", 1 1/2" and 2 3/16", and standard CENTER TO CENTER distances between cross bars (dimension "C") are 3/4", 7/8", 1 3/8", 1 5/8", 2 7/16", 3" and 4". Any spacing of bearing bars can be used with any spacing of cross bars. The panel width is any multiple of dimension "B" plus the bearing bar thickness, up to 3'0", and the length is anything up to 20'0". Spacings between or greater than those given above, and panels over 3'0" wide can be furnished on special order.

Bar spacing and flooring type are identified by a "class" designation consisting of two figures with a letter between, the first figure being dimension "B" in inches, the second figure dimension "C" in inches and the letter between the type of flooring —"G" being used for rectangular flooring. For example, rectangular flooring with 1" clear opening between bearing bars and 4" center to center of cross bars is known as "Class 1-G-4". This particular class has been most generally used, as the spacing is well adapted to most jobs.



TRI-LOK DIAGONAL OPEN STEEL FLOORING

TRI-LOK Diagonal Flooring with straight bearing bars and bent cross bars was designed for those who prefer a pattern other than rectangular and where it is desired to match the design of previous installations of other makes of flooring. It gives a pleasing ornamental effect and retains all the advantages of Tri-Lok construction including the elimination of acute angles at the joint. It furthermore has the important advantage on many jobs of providing minimum opening for passage of solid objects through the flooring. With any of the standard bearing or cross bar spacings given below, AN OBJECT OVER 3/4" SQUARE WILL NOT GO THROUGH. This prevents for example, passage of a bolt with over 3/4" head or catching of the ordinary heel on a woman's shoe.

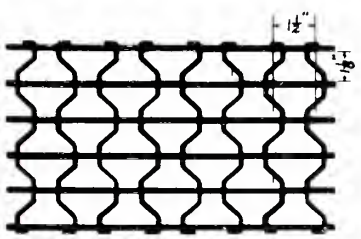
The diagonal cross bars not only completely prevent lateral deflection and increase rigidity but provide 100% distribution for concentrated loads. This feature is exceedingly important since practically all open floorings are subjected to concentrated loads.

Standard CLEAR OPENINGS between bearing bars are 1", 1 1/8" and 1 1/4", and standard

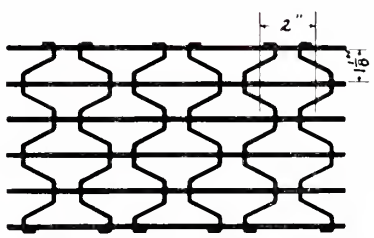
Diagonal Flooring

CENTER TO CENTER distances between cross bars are 1 1/2", 2", 2 1/2", 3" and 3 1/2". Any spacing of bearing bars can be used with any spacing of cross bars. The variation in cross bar spacing changes the pattern as shown on sketch below. Other spacings between bearing bars or cross bars can be furnished to meet special designs.

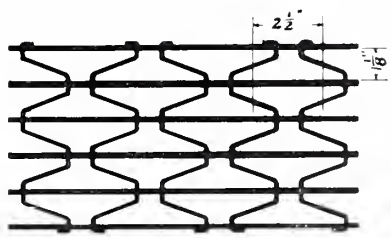
Class designation is the same as for rectangular flooring except that the letter "D" is used—see designations below.



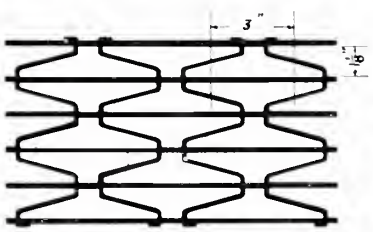
Class 1 1/8"-D-1 1/2"



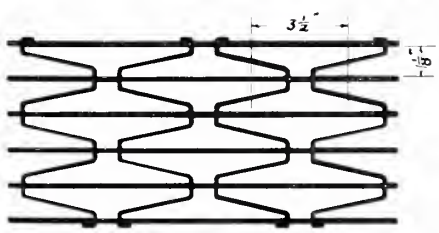
Class 1 1/8"-D-2"



Class 1 1/8"-D-2 1/2"

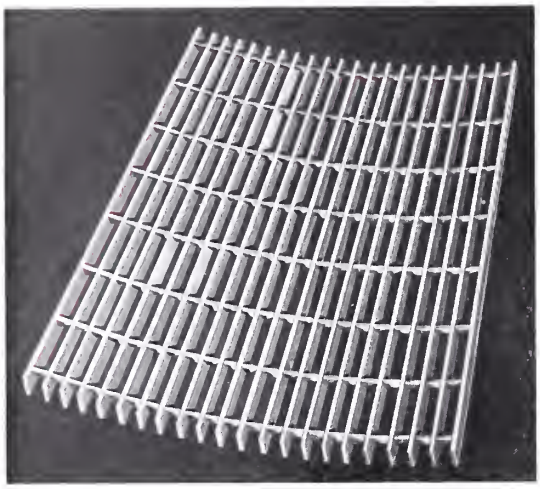


Class 1 1/8"-D-3"



Class 1 1/8"-D-3 1/2"

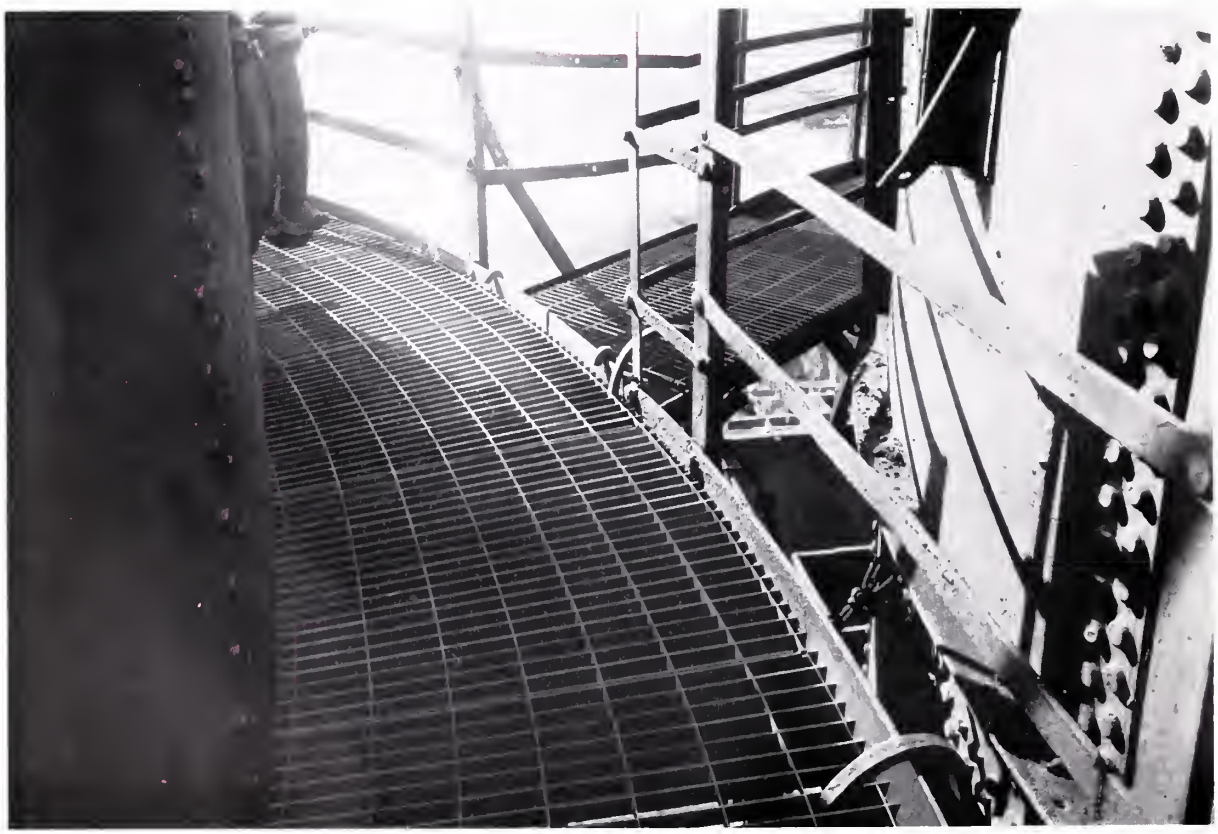
TRI-LOK RADIAL OPEN STEEL FLOORING



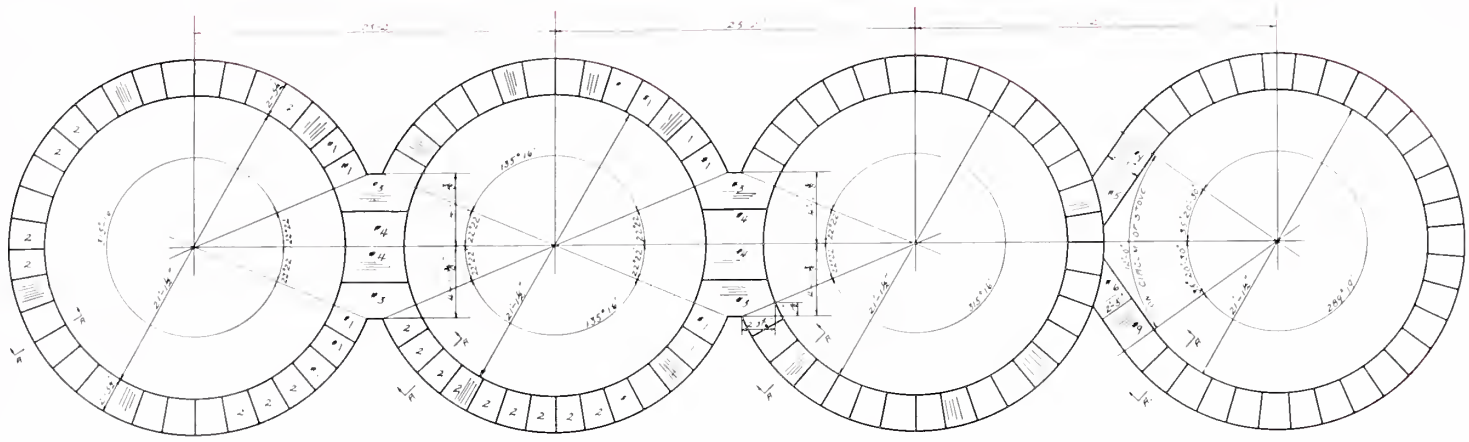
Radial Flooring

TRI-LOK Radial Flooring is made with the bearing bars placed radially and with circular cross bars. It is used for circular walkways, platforms, circular floors or manhole covers. It eliminates the cutting and banding required with all other types of flooring, and provides a much stronger and neater installation at a lower cost.

The class designation is the same as for the rectangular and radial types except that the letter "R" is used, and the bearing bar spacing is that along the mean circumference. For example, "Class 1-R-3" indicates radial flooring having a clear opening of 1″ between bearing bars at the center of the span and 3″ center to center between the circular cross bars.



Tri-Lok Radial Flooring Installation—Note absence of cutting and banding



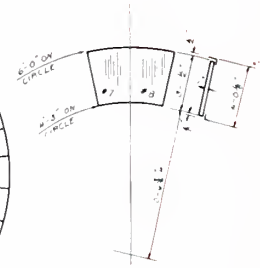
5 - 9° SEGMENTS MK.#1
17 - 10° " MK.#2

10 - 9° SEGMENTS MK.#1
18 - 10° " MK.#2

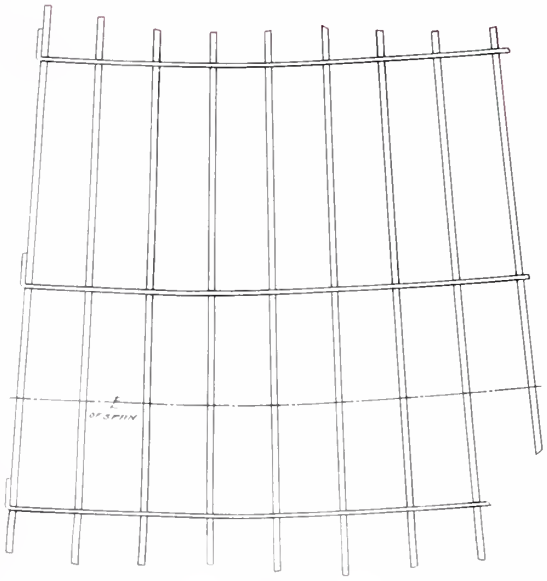
5 - 9° SEGMENTS MK.#1
21 - 10° " MK.#2

1 - 9° SEGMENTS MK.#1
28 - 10° " MK.#2

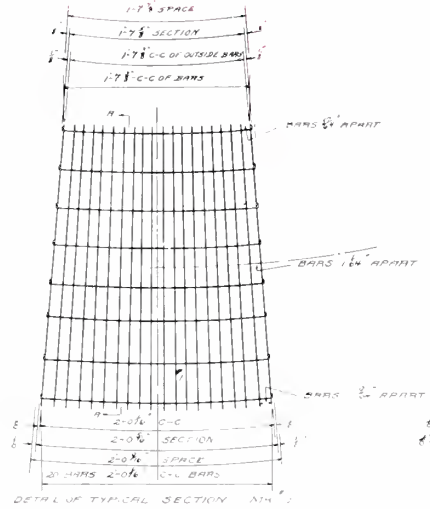
PLAN OF TRI LOK FLOORING
WALKWAYS ABOVE STOVES



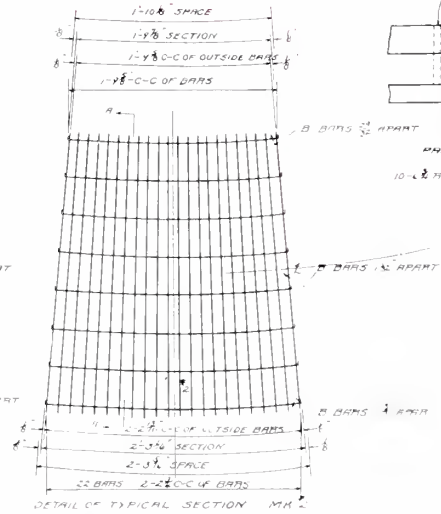
8 LANDING PLATFORMS REQD. AS SHOWN



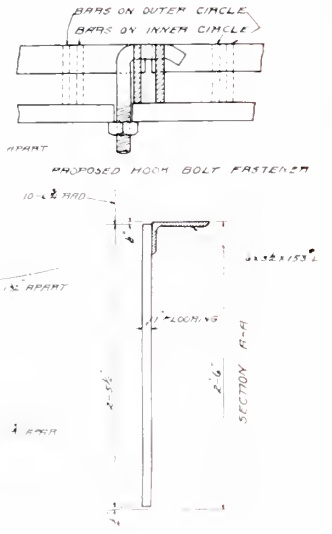
F.S. DWG. SHOWING CONSTRUCTION OF RADIAL BEARING BARS



DETAIL OF TYPICAL SECTION MK.#1



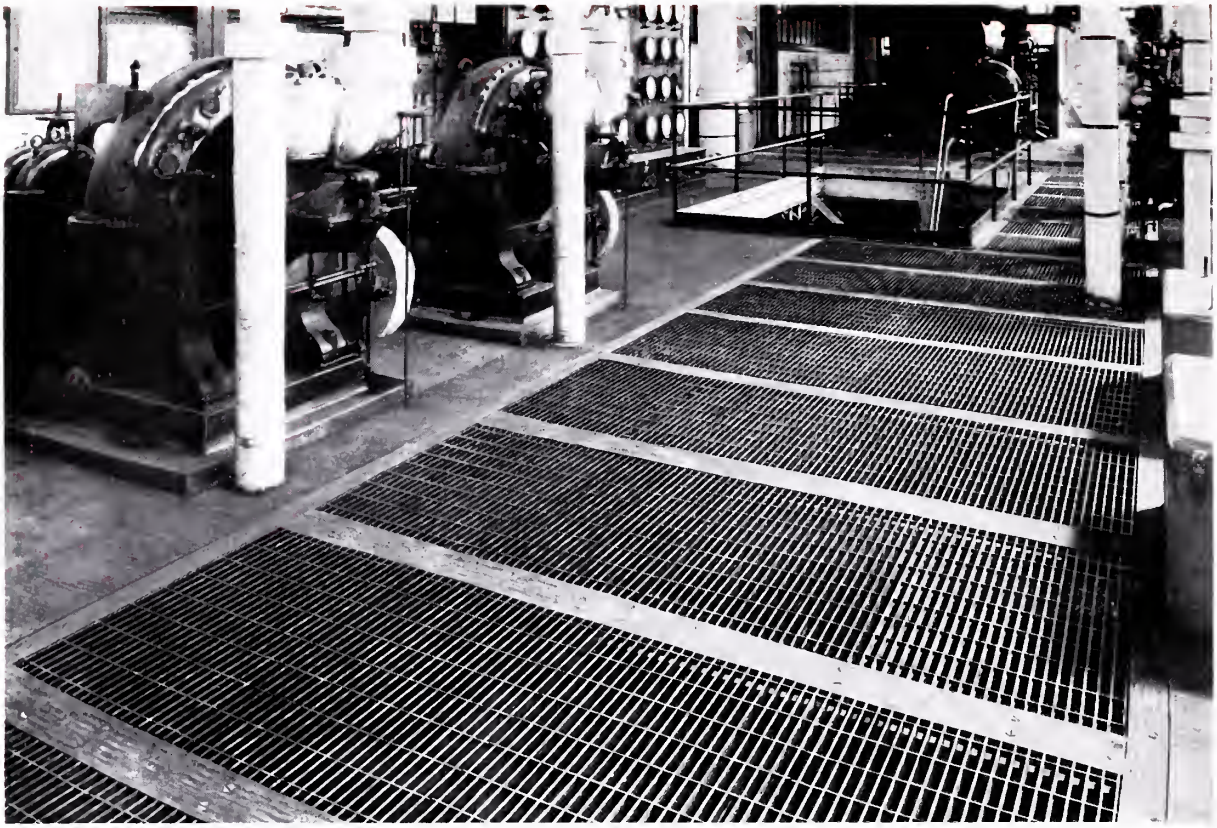
DETAIL OF TYPICAL SECTION MK.#2



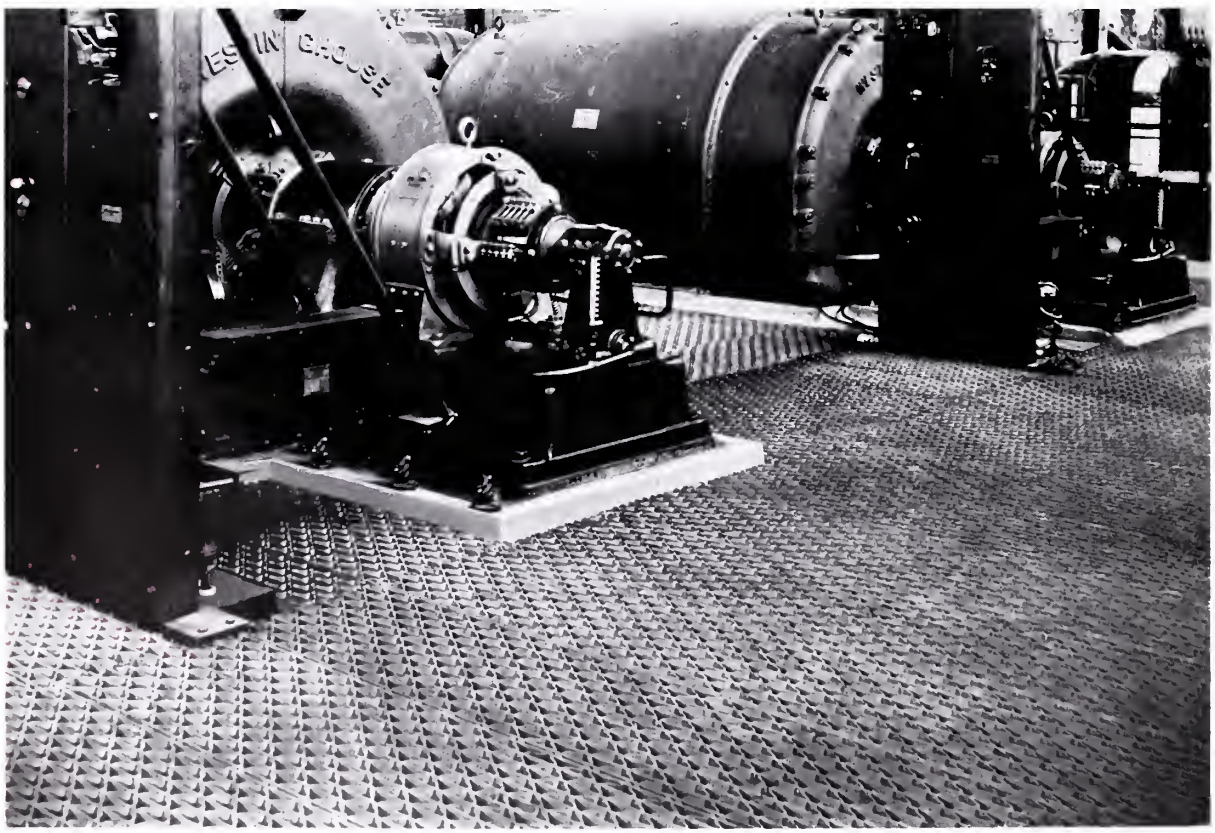
PROPOSED HOOK BOLT FASTENER

BEARING BARS 1 x 1/8 x 1 1/2 RPM.
CROSS BARS 2 1/4 x 1/8 SPM. 1" C-C
HEAT WELD CROSS BARS

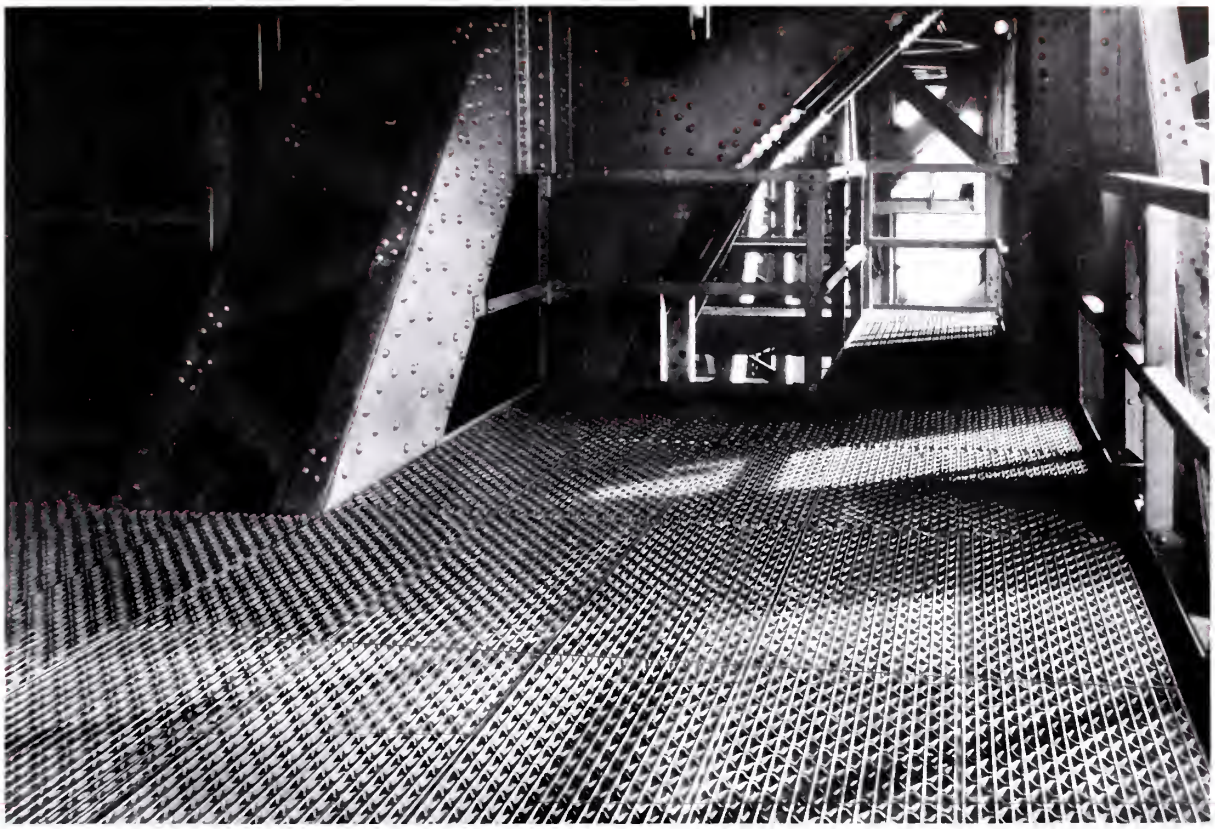
Layout and erection drawing for Tri-Lok radial open steel flooring installation shown on opposite page. Each piece of flooring is marked before shipment with an assembly number corresponding with that on the drawing.



Tri-Lok Rectangular Flooring Installation in large Eastern Public Utility



Tri-Lok Diagonal Steel Flooring Installation in large Power Plant



Tri-Lok Galvanized Diagonal Flooring on Towers of Hudson River Bridge, Fort Lee, N. J

Tri-Lok Galvanized Rectangular Steel Flooring in large Southern Power Plant

INFORMATION WITH ORDERS OR INQUIRIES

The following information will be of assistance with inquiries or orders for flooring:

1—Sketch of area to be covered or size and number of panels required. In the latter case be sure to specify which is the span (distance between supports).

2—Size and spacing of bearing bars—see Load Table.

3—Type of flooring—rectangular, diagonal or radial.

4—Painted or galvanized—galvanizing is recommended, especially if exposed to atmospheric conditions.

5—Type of fasteners—see Page 13. Other types can also be furnished if required.

The factory is always glad to make recommendations on the above for your approval or to definitely select the most desirable material for the job. Be sure to advise the nature and amount of load. If installation is to correspond with another make, give name and type of flooring involved.

Unless otherwise specified all quotations include one coat of high grade black shop paint and necessary standard fasteners.

SPECIFICATIONS

The following specifications are suggested to Engineers and Architects to obtain the two most important requirements for an open steel flooring installation, namely: (1) maximum distribution of concentrated or rolling load and (2) maximum cleanliness, ventilation and light by eliminating acute angles at the joint.

"Open steel flooring shall consist of panels of the size and span between supports shown on the drawings. The width of single panels shall be not less than 2'0" and not more than 3'0".

Neither the bearing or cross bars shall be slotted or cut below the neutral axis. The depth of the cross or distributing bars shall be $\frac{3}{8}$ to $\frac{1}{2}$ that of the bearing bars.

Either rectangular or diagonal type of flooring will be accepted but neither type shall have any acute angles at the joint between the bearing and cross bars. The top surface of all bars must be flush.

The fasteners for the flooring must not extend above the surface and shall be of such design that each fastener anchors two adjoining panels, wherever possible.

All cutouts shown for the passage of pipes, valve stems, columns, etc., shall be provided in the flooring. Where more than four bearing bars are included in the cutout, banding bars of at least the same depth and thickness as the bearing bars shall be used.

The flooring shall be hot dipped galvanized (or painted with one coat of high grade black shop paint)."

TABLE OF SAFE LOADS

FOR TRI-LOK RECTANGULAR, DIAGONAL AND RADIAL FLOORING

with 1 inch clear opening between bearing bars and 4 inch or less center to center between cross bars

Based on official tests. For a fiber stress of 16,000 lbs. per square inch.

w = safe uniform load in lbs. per sq. ft. P = safe concentrated load in lbs. at center of span. c = deflection constant in inches.

SIZE OF BARS Bearing	Cross	Wt. per Sq. Ft.		2′ 0″	2′ 6″	3′ 0″	3′ 6″	4′ 0″	4′ 6″	5′ 0″	6′ 0″	7′ 0″	8′ 0″	9′ 0″	10′ 0″
3/4 x 1/8	3/8 x 14 G	3.5	w	428	281	194	143	109	87						
			P	428	351	291	250	218	196						
			c	.000207	.00049	.00103	.00249	.00325	.00515						
3/4 x 3/16	3/8 x 1/8	5.6	w	642	421	291	215	164	131						
			P	642	527	436	375	328	294						
			c	.000138	.00033	.00069	.00166	.00216	.00342						
1 x 1/8	1/2 x 14 G	5.53	w	777	497	346	254	194	154	124	86				
			P	777	621	519	444	388	347	310	258				
			c	.000085	.00021	.00043	.00083	.00137	.00218	.00335	.00695				
1 x 3/16	1/2 x 1/8	7.00	w	1167	746	518	381	292	231	186	130				
			P	1167	933	777	667	584	520	465	390				
			c	.000057	.00014	.00029	.00053	.00091	.00146	.00223	.00460				
1 1/4 x 1/8	5/8 x 14 G	6.5	w	1215	778	540	398	304	240	194	136	100			
			P	1215	947	810	696	608	540	485	408	350			
			c	.000044	.00011	.00022	.00041	.00070	.00112	.00171	.00353	.00655			
1 1/4 x 3/16	5/8 x 1/8	8.61	w	1822	1168	809	596	456	360	292	203	149			
			P	1822	1460	1214	1043	912	810	730	609	522			
			c	.000029	.00007	.00015	.00027	.00047	.00075	.00114	.00236	.00437			
1 1/2 x 1/8	5/8 x 14 G	7.66	w	1750	1120	778	572	438	346	280	194	142	110		
			P	1750	1400	1162	1001	876	778	700	582	497	440		
			c	.000026	.00006	.00013	.00024	.00041	.00065	.00099	.00205	.00380	.00648		
1 1/2 x 3/16	5/8 x 1/8	10.41	w	2625	1680	1167	857	656	519	420	292	214	164		
			P	2625	2100	1751	1500	1312	1168	1050	876	749	656		
			c	.000017	.00004	.00009	.00016	.00027	.00043	.00066	.00136	.00253	.00432		
1 3/4 x 3/16	3/4 x 1/8	12.12	w	3580	2286	1590	1170	895	707	572	398	292	224	177	143
			P	3580	2858	2385	2048	1790	1591	1430	1194	1022	896	797	715
			c	.000011	.00003	.00005	.00010	.00017	.00027	.00042	.00086	.00160	.00272	.00435	.00664
2 x 3/16	7/8 x 1/8	13.95	w	4666	2987	2079	1525	1176	924	748	519	381	292	231	187
			P	4666	3734	3119	2669	2352	2080	1870	1557	1334	1160	1040	935
			c	.000007	.00002	.00003	.00007	.00011	.00018	.00028	.00058	.00107	.00182	.00291	.00443
2 1/4 x 3/16	1 x 1/8	15.61	w	5910	3780	2625	1930	1478	1167	945	656	482	369	292	236
			P	5910	4725	3938	3378	2956	2626	2363	1968	1687	1476	1314	1180
			c	.000004	.00001	.00003	.00005	.00008	.00013	.00020	.00041	.00075	.00128	.00205	.00313

NOTE—Spans to the right of heavy line not recommended (to avoid excessive deflection).

To obtain the deflection in inches at the center of the span under any uniform load multiply the load per sq. ft. by the deflection constant "c" for the span in question. The deflection under any concentrated load is the same as with 5/3 of this load uniformly distributed over the panel.

For radial flooring the distance between bearing bars is taken at the center of the span (see Page 6).

The concentrated loads given are based on panels 1 foot wide. Since a concentrated load is perfectly distributed by Tri-Lok Flooring, the loads given above (P) may be increased 50% wherever the panel width is 1′6″ or more.

In comparing safe load tables remember that loads on open steel flooring are seldom uniform but are concentrated, such as foot walking or wheeled loads.

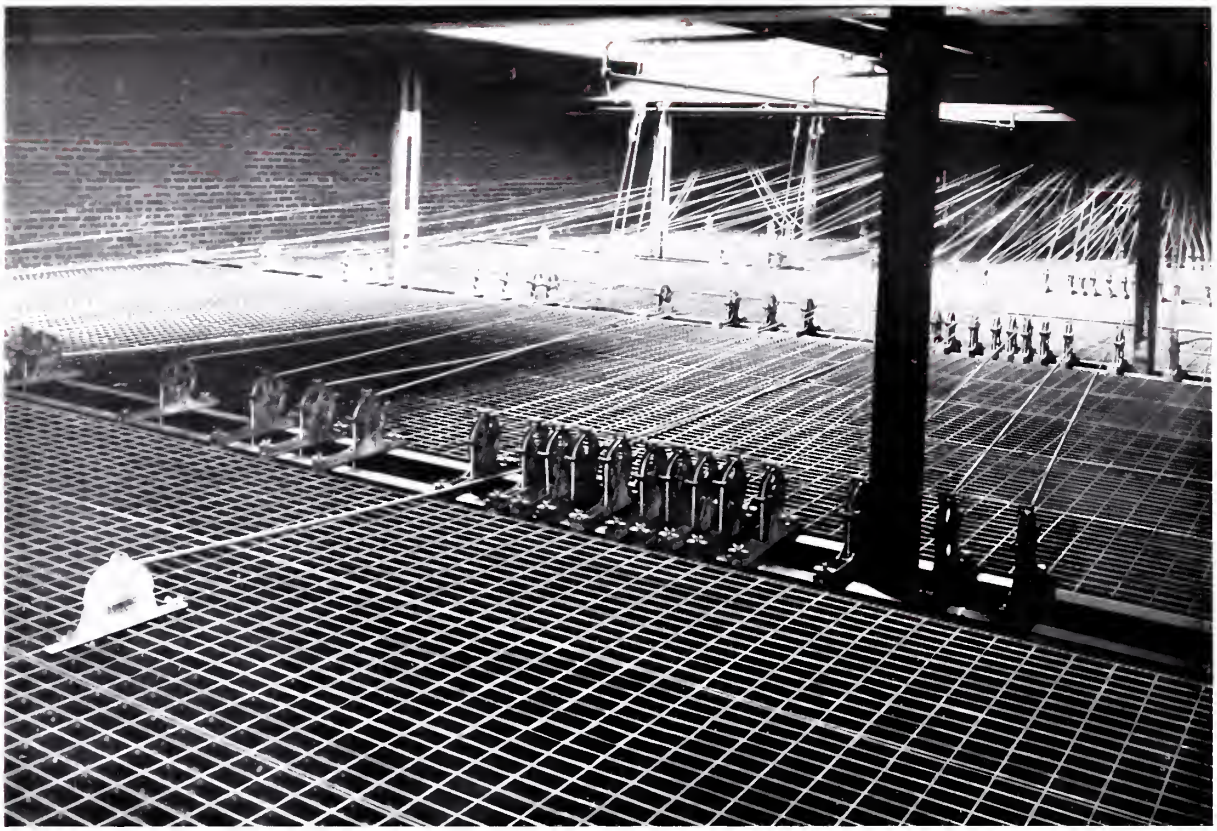
THIS IS EXCEEDINGLY IMPORTANT since floorings built only in narrow widths or with reticulated bars instead of cross braces do not distribute a concentrated load to the same extent as Tri-Lok. Safe load tables showing uniform loads only do not disclose this fact.

Safe loads for bearing bar spacings other than 1″ clear opening are in direct proportion to the number of bearing bars per foot of width.

Safe loads for other thicknesses of bearing bars are in direct proportion to these thicknesses.

The safe loads given can be increased through the use of special steel where desired.

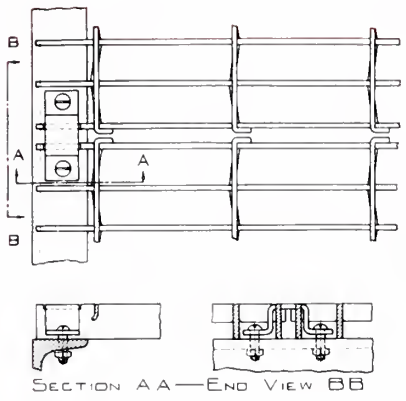
The above loads may be used for Duralumin.



Gridiron over Stage. Tri-Lok Flooring made with large openings so that ropes can be drawn through to hang scenery.

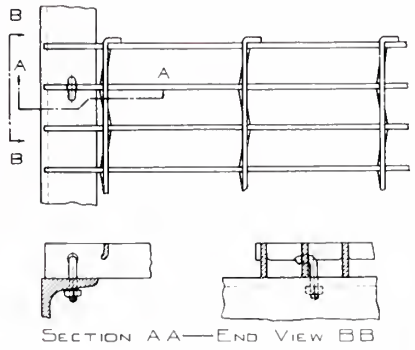
Tri-Lok Ventilating Flooring.—Approach to Holland Tunnel, Jersey City, N. J.

TRI-LOK FASTENERS



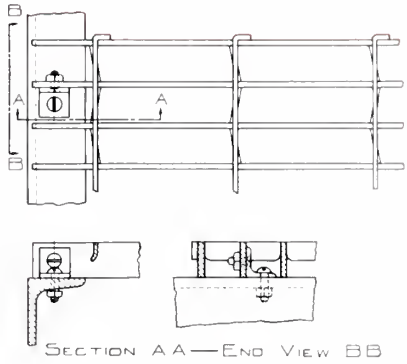
FP-1

Positive Type—Anchors two adjoining panels. Bars are notched for fasteners if location is furnished before shipment.



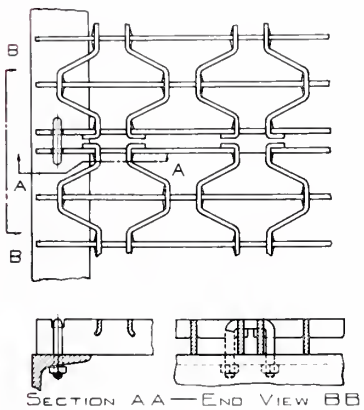
FP-2

Positive Type—Anchors one panel. Hook is bent over after insertion through hole.



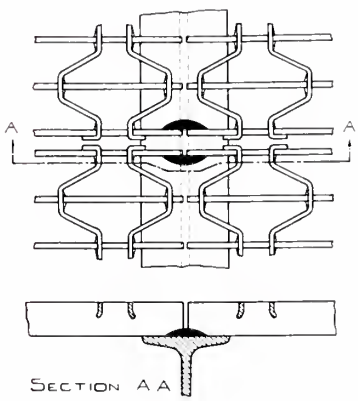
FP-4

Positive Type—Anchors one panel.



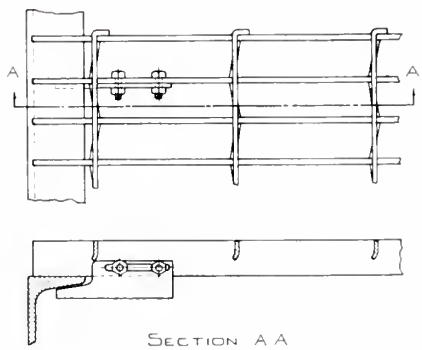
FP-5

Positive Type—Anchors two adjoining panels. Can also be furnished as U-bolt (indicated in dotted lines).



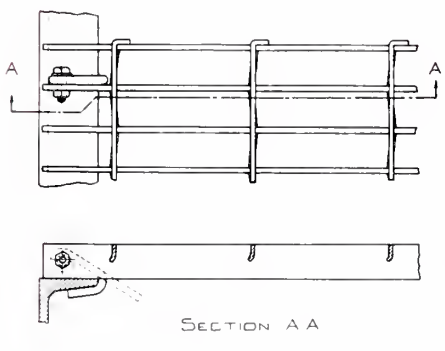
FP-6

Welded Joint. Positive Type—Anchors four (or two) adjoining panels. Used only where electric welding is available on job.



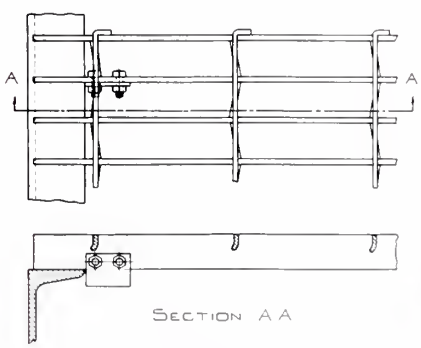
FA-1

Adjustable Type—Anchors one panel



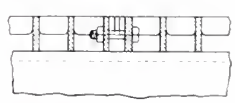
FA-3

Adjustable Type—Anchors one panel. Furnished straight (see dotted lines) and bent over on job.

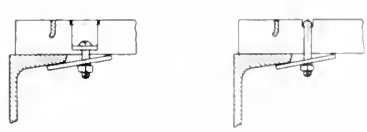


FA-4

Adjustable Type—Anchors one panel. Plates can be welded on if preferred. Recommended where panel is frequently removed.

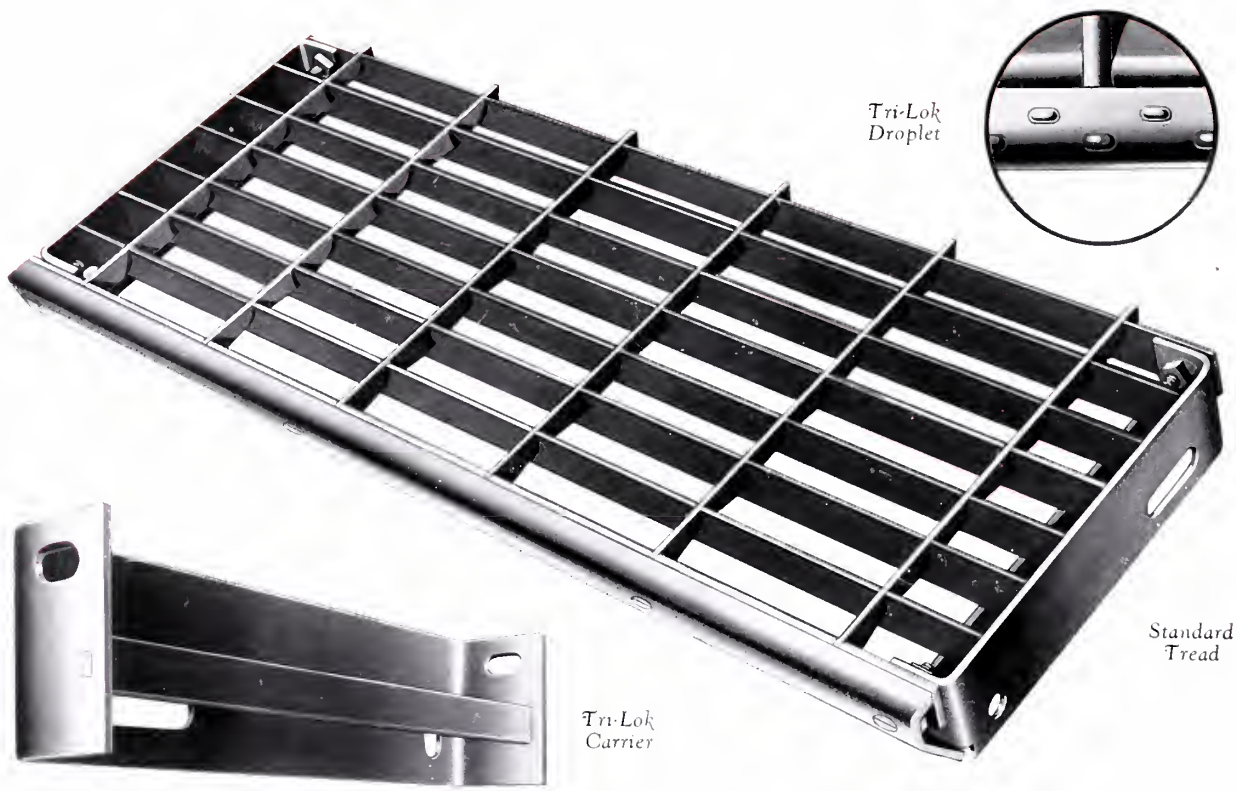


Tie bolt—for intermediate points on long spans.



FP-1, FP-2, FP-4 and FP-5 Fasteners can be bolted to plate as shown above rather than to beam, but this does not provide a positive anchor.

TRI-LOK SAFETY STEPS



The above illustration shows a tread made of rectangular flooring. These treads are also made with diagonal flooring as shown in the installation picture on opposite page, where this pattern is preferred or where it is desired to match up with a flooring installation of the diagonal type.

THE Tri-Lok Safety Step consists of a panel of rectangular or diagonal Tri-Lok flooring of any desired width, length, depth and bar spacing, provided with a nosing bar and carriers attached at each end. These carriers have holes for bolting to the stringers so that each step is complete ready for installation. Kick plates or risers can be attached to the back of the step when desired. Being made from sections of Tri-Lok flooring, these treads have all the advantages resulting from the Tri-Lok joint as described on pages 2 and 3. In addition they are the only tread on the market combining the following essential features:

Slipless

The Tri-Lok Safety Step is inherently and permanently slipless under ordinary conditions but for installations subject to unusual amounts of oil, grease, soap, etc., the patented droplets shown above can be used.

Visible Edge

The patented nosing bar makes the edge of each step stand out clearly from the next step below, thereby eliminating any possibility of over-stepping from optical illusion.

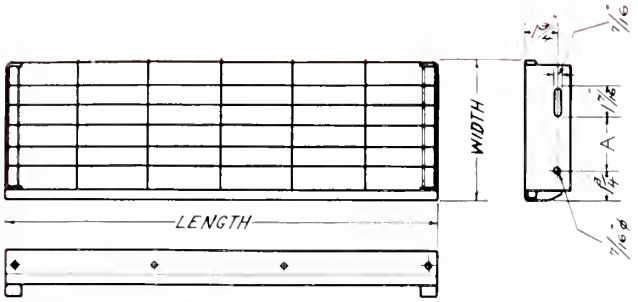
Clogless

The Tri-Lok joint with its square corner makes the step itself perfectly clogless. The patented carriers support the step firmly on the stringer, but form no shelf or pocket as in the ordinary type where dirt, moisture, rust, etc. can accumulate. Any such accumulation is unsanitary, obstructs the passage of light and air, and may eventually rust out the rivets or bolts. The Tri-Lok safety step is not only an excellent foot scraper, but also clears itself and stays clean.

Strength

The great inherent strength of the Tri-Lok step is materially increased by the shape of the nosing bar which is rigidly attached to the front bearing bar and provides added resistance to deflection at the point of maximum load. For a given weight, Tri-Lok Steps are the strongest on the market.

The above features make Tri-Lok truly a SAFETY STEP.

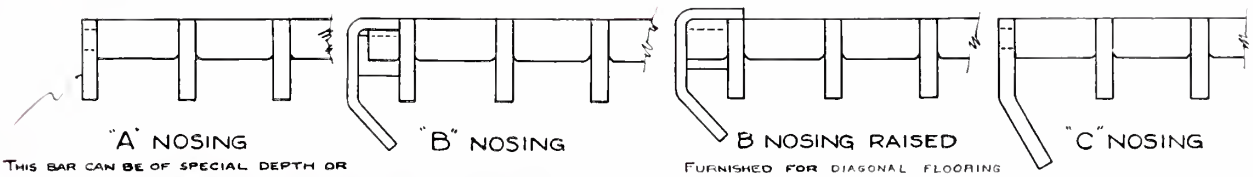


WITH TYPE "B" NOSING

Width	Dimension "A"	Depth of Bearing Bar	Maximum Recommended Span
6	1 7/8	3/4"	2'3"
7	3	1 "	3'6"
8 1/4	4	1 1/4"	4'6"
9 1/2	5	1 1/2"	5'6"
10 9/16	6		
12	7		

Dimensions shown to the left cover standard steps which are stocked for quick delivery in any desired length. These stock treads have bearing bars 3/16" thick and 3/4", 1", 1 1/4" or 1 1/2" deep, spaced with 1" clear opening, and 4" center to center of cross bars. OTHER SIZES can also be furnished promptly.

While the type "B" nosing is generally used because of its strength and visibility, Tri-Lok Safety Steps can also be furnished at no extra cost with any one of the four types of nosing shown below. Tread widths, dimension "A" and recommended spans vary slightly when type "A" or "C" nosing is substituted for type "B".



THIS BAR CAN BE OF SPECIAL DEPTH OR THICKNESS

FURNISHED FOR DIAGONAL FLOORING UNLESS OTHERWISE ORDERED

Tri-Lok Diagonal Safety Steps and Steel Flooring in large Cement Plant. Note visibility of nosing on treads.

Concrete Filled Stairways

For concrete filled stairways the carriers are usually omitted and sometimes also the nosing bar—in other words, the flooring panels are simply set in the concrete, no fastening devices of any kind being required because of the solid anchorage at each joint furnished by the bend in the cross bar.

Information with Orders

When ordering Tri-Lok Safety Steps please specify:

(1) Width of step (see drawing above).

(2) Length of step (Note:—Steps will be shipped exact length specified on order. When used between wall stringers it is ordinary practice to allow 1/32" clearance at each end).

(3) Depth of bearing bars, and type of flooring (rectangular or diagonal).

(4) Type of nosing bar ("B" type always furnished unless otherwise specified).

(5) If kick plate is desired send sketch showing dimensions.

(6) Type of finish—painted or galvanized,—galvanizing is recommended if exposed to the weather.

TRI-LOK ARMORING

"Not a Crack in a Mile"

IT is no longer necessary to have high maintenance costs on driveways, platforms, floors, etc., which are made of concrete, asphalt or other plastic materials. These surfaces can now be equipped at small expense with Tri-Lok Armoring which will eliminate cracking and chipping and prolong the life indefinitely.

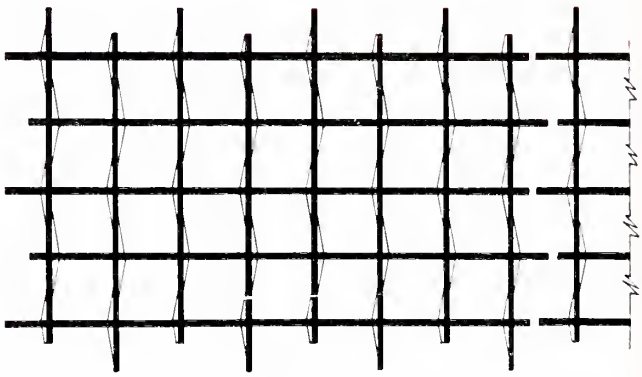
Tri-Lok Armoring consists of Tri-Lok flooring panels of standard construction except that the bearing and cross bars project to give the staggered joint shown in the sketch to the right. These panels are also treated with a hot lye

Tri-Lok Armoring used for Expansion Joints

wash, to eliminate grease and oil and provide complete adhesion with the concrete. Tri-Lok armoring is free from any bolted, welded or riveted joints or any acute angles which retard the uniform flow of concrete.

Tri-Lok armoring panels divide the surface into small rectangular blocks each completely surrounded by rigid steel bars flush with the surface. All wear and impact is therefore absorbed by the steel bars, and cracks cannot pass from one rectangle to another. Likewise, the staggered joints prevent any cracks between panels. This makes the floor a single uniform crackless structure.

The installation of Tri-Lok armoring is very simple and inexpensive. Panels come in sizes for convenient handling and after the concrete or other surface material is poured the panels are placed side by side and sunk flush with the surface of the concrete by walking over or tamping.



Tri-Lok Armoring Panel

Tri-Lok panels can easily be fabricated for bolting together by overlapping the bars but we do not recommend this arrangement as it involves placing and levelling the armoring before the concrete is poured. Experience proves that this means an almost prohibitive installation cost not only in lining up and bolting the panels but also in placing the wedges and other supports necessary to make the armoring level. Further, these wedges and supports are frequently upset by the impact of the concrete as poured, resulting in low points in the surface of the armoring.

Tri-Lok armoring is manufactured under a 1600 ton press with the same twist and turn lock as other Tri-Lok products. This results in the following important and exclusive advantages:

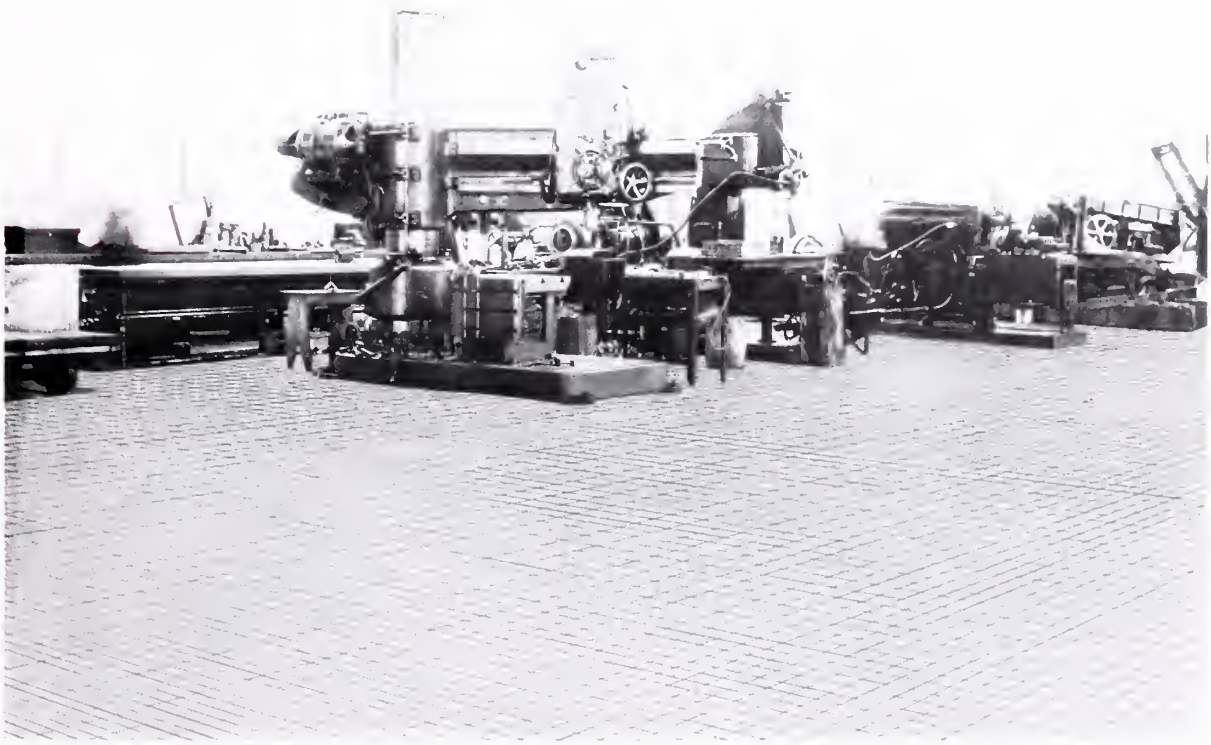
1—The twist of the cross bars provides a lock with the concrete at every joint so that no fasteners are required. All other types should be attached by fasteners which involves placing and levelling the armoring before the floor is poured, with the resultant disadvantages outlined above.

2—The tremendous pressure under which Tri-Lok is assembled means a perfectly smooth surface which at the same time is slipless because of the square edges of the steel bars.

3—Any bar spacing can be furnished to correspond with the size of truck wheels or size of the material to be dropped on the surface. Not one spacing for all jobs.

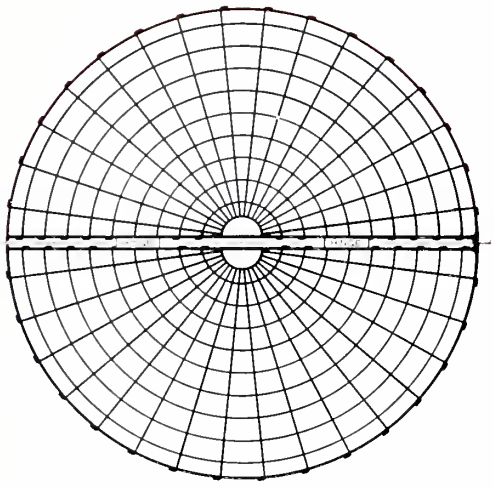
4—The rigidity of any armoring is directly proportional to its ability to distribute any concentrated load or shock. Because of the tremendous strength of its joint Tri-Lok rigidity gives perfect distribution.

Tri-Lok Armoring used on main highway between New York and Philadelphia, near Trenton, N. J. After a period of time the engineers studying the effect of Tri-Lok Armoring on this job reported, "There are no cracks in the armored section but several cracks have developed in the adjoining section of the same highway laid at the same time without armoring."

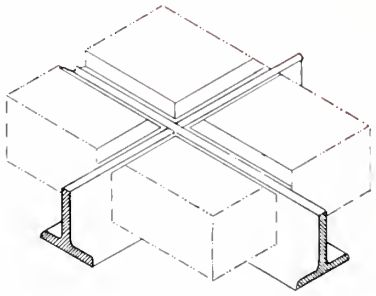


Tri-Lok Armoring in large Industrial Plant

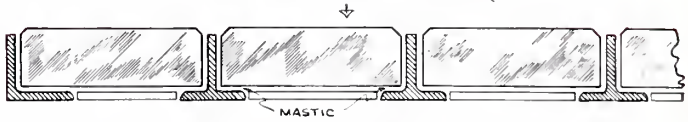
TRI-LOK SPECIALTIES



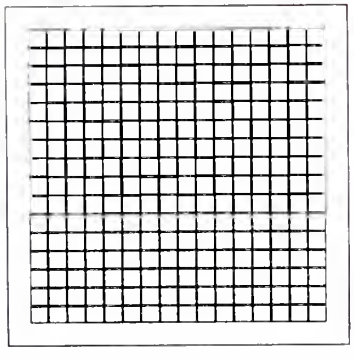
Manhole Covers



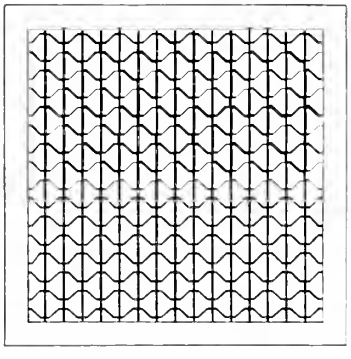
Glass, Tile, Slate or Concrete Blocks, etc.



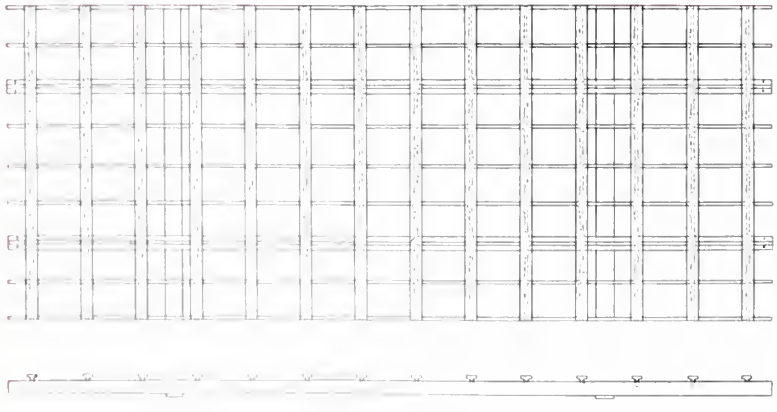
Sidewalk Lights or Roofs



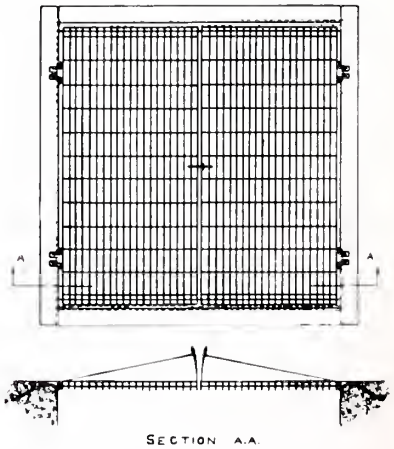
Rectangular Type Grills



Diagonal Type Grills

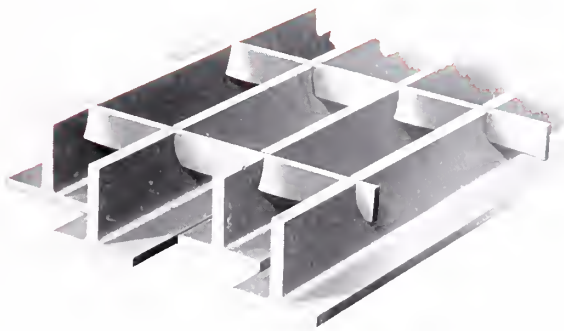


Core Oven Trays



Sidewalk Doors

T-Tri-Lok



T-Tri-Lok Showing Staggered Bars

EVERY construction engineer will recognize in the new T-Tri-Lok a real discovery in modern construction for bridge and building floors, railroad crossings, loading platforms or wherever a self-supporting structure under heavy loads is required.

In many cases the substitution of T–Tri–Lok flooring on an old structure makes possible a tremendous increase in carrying capacity with no more dead load on the structure itself.

T–Tri–Lok panels have also been used as precast slabs with enormous saving in cost. These slabs can be furnished with lifting hook attachment to permit removal.

T–Tri–Lok is manufactured with the triple lock under a 1600 ton press exactly the same as other Tri-Lok products except that the main bearing bars are tees instead of flat bars. The strength of these tees is increased by the wedge action from forcing the cross bars into place and the load carrying capacity of the panel is further increased two to five times by the short columns of concrete under compression between the T-bars. This has been fully proven by elaborate laboratory tests, data on which will be furnished on request.

T–Tri Lok panels are ordinarily joined by the staggered bar construction as explained on page 16 but when necessary the outside bearing bars on each panel are made with angles rather than tees and these angles bolted or riveted together on the job.

The principal advantages of this new floor construction may be summarized as follows:

ELIMINATION OF CONCRETE FORMS:—No forms of any kind are required.

ARMORING:—The square edges of the steel when filled flush not only make the surface slipless but also prevent any cracking or chipping of the concrete, assuring a floor life as long as the structure itself.

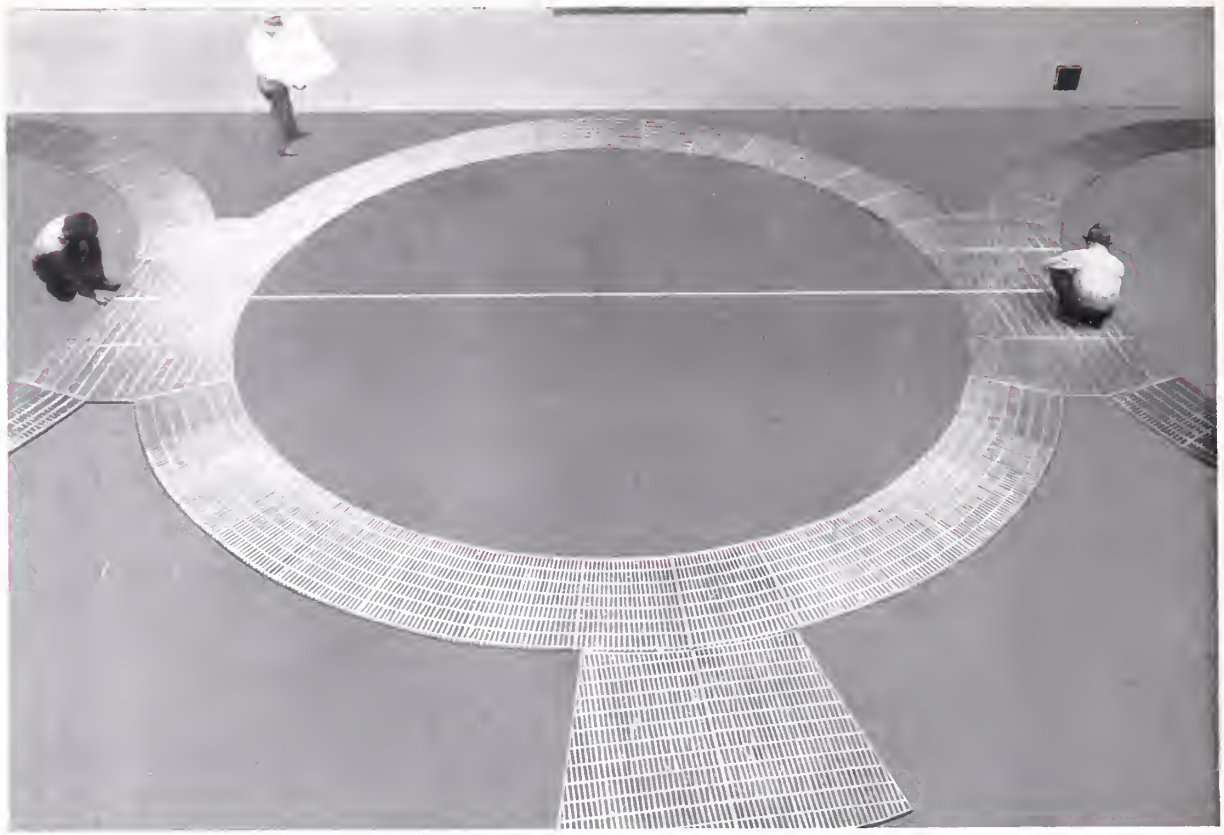
TIME OF INSTALLATION:—The time element is an important feature as the wide panels are laid on the flooring beams, anchored as required, filled with concrete or asphalt and the floor is complete.

CONTINUOUS SURFACE:—The staggered bearing and cross bars make the floor integral and monolithic.

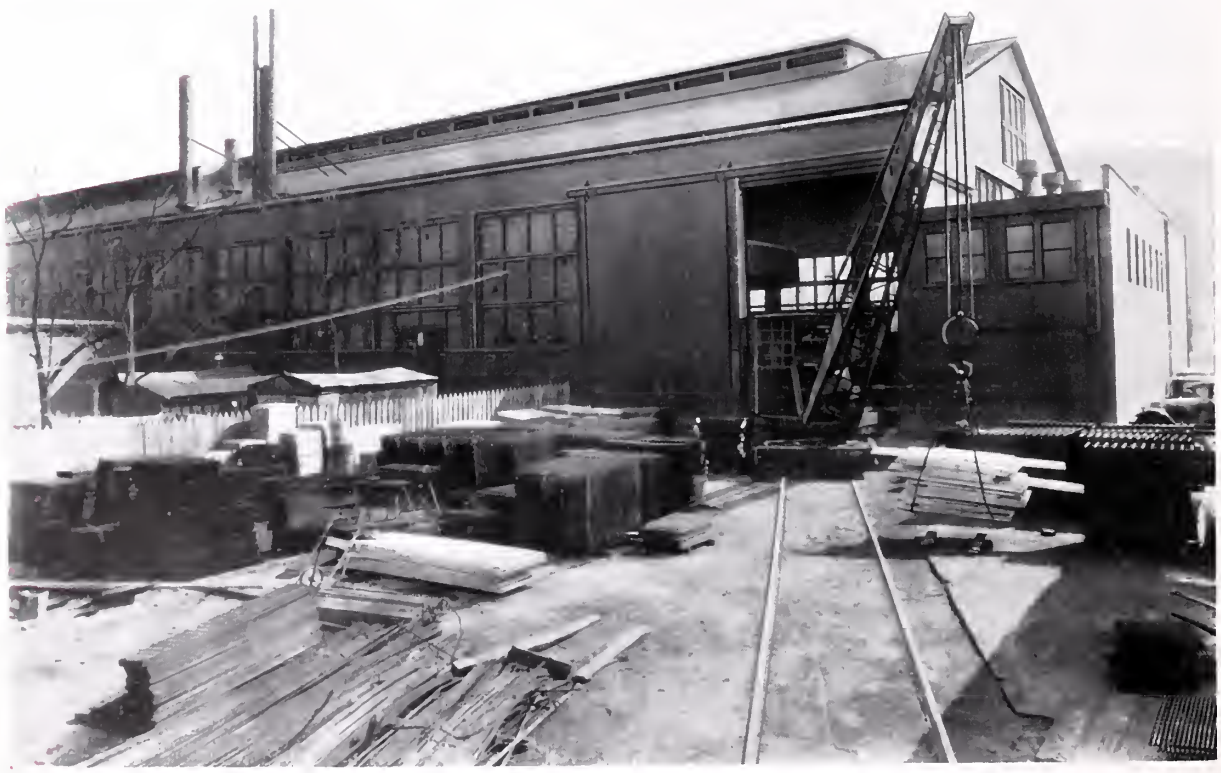
ECONOMICAL:—The dead load on the entire structure is only one-fourth to one-third that of the ordinary floor construction as the thickness is only one-fourth that of the usual floor.

Additional data on T-Tri-Lok will be furnished on request.

T-Tri-Lok being installed on a prominent bridge over the Ohio River



Tri-Lok Layout Department



Tri-Lok Ready for Shipment

Printed in U.S.A.